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WE CLAIM:

1. A method for the successive heat treatment of a series of flat substrates, comprising:

placing each of the series of substrates, in sequence, adjacent to, and essentially parallel to, a heating body having a flat boundary surface facing the substrate,

measuring the temperature in said heating body at a location therein that is so close to the boundary surface that after the substrate has been placed in position the withdrawal of heat from the heating body by the substrate is measured at that location,

placing each of the series of substrates in the vicinity of said heating body, only after a desired temperature measured in said location has been reached;

supplying an amount of heat to said heating body such that the temperature measured at said location during the successive heat treatment of the series of substrates has an essentially constant value averaged over time; and

removing each of the series of substrates from said heating body before said desired temperature, measured at said location, is reached again.

2. The method according to Claim 1, wherein said desired temperature has a constant value by means of which an initial treatment temperature  $T_{trig}$  is defined.

3. The method according to Claim 1, wherein said desired temperature is determined by extrapolating the temperature measured at said location over a period selected from the group consisting of an extrapolated period  $t_{load}$  required for placing said substrate in the vicinity of said heating body, adjacent to the heating body, an extrapolated period  $t_{process}$  for which the heat treatment is to be carried out, during which said substrate remains in the vicinity of said heating body, adjacent to the heating body, and an extrapolated period  $t_{sum}$  which is equal to the sum of the periods of the two periods  $t_{load}$  and  $t_{process}$ .

4. The method according to Claim 3, wherein said measured temperature has a desired constant value after extrapolation over said period  $t_{load}$ .

5. The method according to Claim 3, wherein said measured temperature has a desired constant value after extrapolation and averaging over the period  $t_{process}$  of the heat treatment to be carried out.

6. The method according to Claim 3, wherein said measured temperature has a desired constant value after extrapolation over the period  $t_{\text{sum}}$  and averaging over the period  $t_{\text{sum}}$ .

7. The method according to Claim 3, wherein the extrapolation is a linear extrapolation.

8. The method according to Claim 3, wherein a starting period that is taken as starting point for the extrapolation is of approximately the same magnitude as the extrapolation period.

9. The method according to Claim 1, wherein said location where the temperature of said heating body is measured is a distance of less than 5 mm away from said flat surface.

10. The method according to Claim 1, wherein said location where the temperature of said heating body is measured is a distance of less than 2 mm away from said flat surface.

11. The method according to Claim 1, wherein a constant amount of heat is supplied to said heating body supplied during treatment of the substrates, said constant amount of heat being greater than amount of heat supplied to said heating body before treatment of the substrates.

12. The method according to one of Claim 1, wherein during the treatment of the substrates the heat supplied to the heating body is controlled in accordance with a constant value  $T_1$  of the temperature of the heating body.

13. The method according to Claim 12, wherein an initial treatment temperature  $T_{\text{trig}}$  is equal to the value  $T_1$  of the temperature of said furnace body during the treatment of the substrate.

14. The method according to Claim 12, wherein an initial treatment temperature  $T_{\text{trig}}$  is higher than the temperature of the heating body  $T_0$  before the start of treatment of the substrates but is lower than the constant value temperature  $T_1$  of the furnace body during the treatment of the substrates.

15. The method according to Claim 1, wherein the temperature in said heating body is measured in two different locations located some distance away from said flat surface

and heat is supplied using a control according to a cascade principle, wherein the measurement of the temperature at one of said locations is coincident with the measurement of an initial treatment temperature.

16. The method according to Claim 1, wherein after each substrate has been removed from the vicinity of the heating body the substrate is positioned in the vicinity of a cooling body.

17. The method according to Claim 1, wherein each of said series of substrates is arranged between flat surfaces of a first heated body and a second heated body which are located opposite one another and are each provided with individual heating devices, wherein the temperature of said second heating body is measured at a location spaced from said flat surface of said second heating body in such a way that withdrawal of heat from the heating body by the substrate is detected and that positioning of each substrate in the vicinity of said second heating body takes place at approximately the same time as positioning of each substrate in the vicinity of the first heating body, at a point in time at which the temperature of the second heating body measured in this way is substantially equal to a desired initial treatment temperature  $T_{\text{trig}}$ .

18. A device for the heat treatment of a series of substrates, comprising a heating body with a flat surface for accommodating a substrate adjacent to said surface, controllable heating means for heating said heating body, a digital control means, at least one temperature sensor arranged in said heating body near to said flat surface such that withdrawal of heat from said heating body by said substrate is detected, wherein said heating means are connected to said control means, wherein said temperature sensor is connected to said control means, transport means for positioning substrates in the vicinity of said heating body adjacent to said flat surface and for removing substrates therefrom, wherein said transport means are connected to said control means, said control means being provided with extrapolation software for extrapolating over a time interval the temperature measured by said temperature sensor, and said control means arranged in such a way that said positioning each of said substrates in the vicinity of said heating body is able to take place only if the temperature extrapolated over said time interval has reached a desired temperature value.

19. The device according to Claim 18, wherein said at least one temperature sensor is arranged in the heating body a distance of less than 5 mm away from said flat surface.

20. The device according to Claim 19, wherein said at least one temperature sensor is arranged in the heating body a distance of less than approximately 2 mm away from said flat surface.

21. The device according to Claim 18, wherein said control means comprise a low level control means for controlling said transport means and high level control means, wherein said high level and said low level control means are arranged in such a way that after emission of a starting signal by said high level control means to said low level control means, said low level control means enables said transport means to perform a plurality of movements according to a predetermined pattern, and wherein said high level control means is arranged for monitoring unsafe situations based on input signals during the performance of one of said plurality of movements and is arranged for emitting a interrupt signal to the low level control means if an unsafe situation occurs.

22. The device according to Claim 18, comprising a second heating body with a second flat surface for accommodating a substrate adjacent to said surface, wherein said heating body and said second heating body are arranged such that said flat surface and said second flat surface are parallel to each other and relatively moveable towards and from each other for accepting and releasing of said substrate between said heating body and said second heating body, wherein said second heating body is provided with

second controllable heating means for heating said second heating body,

at least one second temperature sensor, arranged in said second heating body near to said flat surface such that withdrawal of heat from said second heating body by said substrate is detected and

wherein said second heating means are connected to said control means, and wherein said control means are arranged in such a way that said positioning of each of said series of substrates in the vicinity of said heating body and said second heating body is able to take place only if the temperature measured by said second

temperature sensor and extrapolated over said time interval has reached a desired temperature value.

23. The device according to Claim 18, further comprising a cooling body with a cooling chamber for accommodating the substrate, wherein the cooling body is arranged in an extension of a transport direction of transport means.

24. A method for successively heat treating a series of substrates within a heating chamber comprising a heating body having a boundary surface that faces the substrates, the method comprising:

- supplying power to the heating body such that the heating body can reach a target temperature;

- positioning a first substrate adjacent the boundary surface of the heating body;

- measuring the temperature in the heating body at a location in the heating body sufficiently close to the first substrate to detect heat withdrawal from the heating body upon loading substrates;

- removing the first substrate from the heating chamber before the measured temperature of the heating body reaches a trigger temperature;

- positioning a second substrate in the heating chamber adjacent the boundary surface when the measured temperature reaches the trigger temperature;

- measuring the temperature of the heating body at the location; and

- removing the second substrate from the heating chamber before the measured temperature of the heating body reaches the trigger temperature.

25. The method of Claim 24, wherein supplying power to the heating body comprises supplying sufficient power to said heating body such that the measured temperature at the location during heat treatment of the series of substrates has an essentially constant value averaged over time.

26. The method according to Claim 24, wherein the trigger temperature has a constant value.

27. The method according to Claim 24, further comprising determining the trigger temperature by extrapolating the measured temperature at the location over a time period.

28. The method according to Claim 27, wherein the time period substantially corresponds to a time required for placing a substrate into the heating chamber and adjacent the heating body.

29. The method according to Claim 27, wherein the time period substantially corresponds to a time during which each of the series of substrates is to be subjected to heat treatment.

30. The method according to Claim 27, wherein the time period substantially corresponds to a sum of a time required for placing the substrate into the heating chamber and adjacent the heating body and a time during which the substrate is to be subjected to heat treatment.

31. The method according to Claim 27, wherein the trigger temperature decreases for each of an initial plurality of the series of substrates.

32. The method according to Claim 27, wherein a removal temperature increases for each of an initial plurality of the series of substrates.

33. The method according to Claim 27, wherein extrapolating comprises a linear extrapolation.

34. The method according to Claim 27, wherein extrapolating is started at a period that has approximately the same magnitude as a period over which the extrapolation is carried out.

35. The method according to Claim 24, wherein the location is less than 5 mm away from the boundary surface.

36. The method according to Claim 24, wherein the location is less than 2 mm away from the boundary surface.

37. The method according to Claim 24, comprising supplying a constant amount of power to the heating body,

38. The method according to Claim 37, wherein supplying power comprises supplying constant amount of power being supplied to the heating body is greater than an amount of power being supplied to the heating body before the first substrate is positioned in the heating chamber.

39. The method according Claim 24, wherein the supplying power to the heating body involves decreasing the power supplied to the heating body as the heating body approaches the trigger temperature.

40. The method according to Claim 39, wherein the trigger temperature is equal the target temperature.

41. The method according to Claim 39, wherein the trigger temperature is higher than the temperature of the heating body before the start of treatment of the first substrate but is lower than the target temperature.

42. The method according Claim 24, further comprising measuring a temperature of the heating body at a second location that is located at a positioned further from the boundary surface than the location.

43. The method according to Claim 42, comprising controlling an amount of power supplied to the heating body according to a cascade principle.

44. The method according to Claim 24, further comprising positioning the first substrate near a cooling body.

45. A method for processing a plurality of wafers in sequence within a hot wall reactor, the method comprising:

measuring a reactor temperature; and

triggering a wafer loading mechanism when the reaction temperature reaches a predetermined threshold.

46. The method of Claim 45, further comprising triggering the wafer loading mechanism to remove each of the plurality of wafers from the hot wall reactor before the reaction temperature reaches the predetermined threshold.

47. The method of Claim 45, wherein the predetermined threshold is a constant measured reactor temperature for the series of wafers.

48. The method of Claim 45, wherein the predetermined threshold is a measured reactor temperature that reduces with each of an initial plurality of the series of wafers.

49. The method of Claim 48, further comprising unloading each of the series of wafers after processing a constant processing time.



50. The method of Claim 49, wherein unloading is conducted at an unload measured reactor temperature that increases for each of the initial plurality of the series of wafers.

51. The method of Claim 45, further comprising unloading each of the series of wafers after processing a constant processing time.